

### Abstract of the Disclosure

Provided is a magnetoresistance device. The device includes a substrate, a lower layer formed on the substrate, and a magnetoresistance structure formed on the lower layer, and the lower layer is formed of amorphous  $Zr_xAl_{1-x}$  ( $0 < x < 1$ ) or  $Zr_xAl_{1-x}O_y$  ( $0 < x < 1$ ,  $0 < y < 1$ ). In a tunneling magnetoresistance (TMR) device, a tunneling barrier layer is formed of at least one selected from the group consisting of  $Zr_xAl_{1-x}O_y$  ( $0 < x < 1$ ,  $0 < y < 1$ ),  $Ti_xAl_{1-x}O_y$  ( $0 < x < 1$ ,  $0 < y < 1$ ), and  $Nb_xAl_{1-x}O_y$  ( $0 < x < 1$ ,  $0 < y < 1$ ).

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